

REMARKS

The Official Action dated November 2, 2005 has been received and its contents reviewed. The Examiner is thanked for his review and consideration of this instant application and for discussion this case with Applicant's representative in an Examiner Interview conducted January 23, 2006.

Claims 1-14 are presently pending in the instant application, of which claims 1 and 8 are independent.

Referring now to the detailed Office Action, claims 12-14 stand rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Particularly, claims 12-14 recite "the software" without sufficient antecedent basis for this limitation. In response, Applicant has amended the claims, as shown above, to overcome the rejection.

Claims 1, 8, 10 and 12-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kanno (U.S. Patent No. 4,998,122 – hereafter Kanno) in view of Ostromoukhov (U.S. Patent No. 5,436,431 – hereafter Ostromoukhov). Further, claims 2-3, 5, 7, 9 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kanno in view of Ostromoukhov and Harrington (U.S. Patent No. 5,153,576 – hereafter Harrington). Still further, claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kanno in view of Ostromoukhov and Harrington and obvious engineering design choice. Finally, claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kanno in view of Ostromoukhov and Harrington and Hines (U.S. Patent No. 6,034,782 – hereafter Hines). These rejections are substantially a repeat of the rejections made in the Office Action mailed April 7, 2005. In response, Applicant hereby incorporates the remarks submitted in the Amendment filed August 8, 2005 and further traverse these rejections for the reasons provided below.

In the rejection of independent claim 1, the Examiner repeated the allegation that Kanno discloses all those limitations set forth in accordance with the Applicant's claimed invention except that Kanno "does not disclose expressly that the halftone image is a halftone color image; that the first dithering technique is a clustered dot dithering technique; and that the second dithering technique is a dispersed dot dithering technique." To cure these deficiencies of Kanno, the Examiner relies on the teachings of Ostromoukhov.

Particularly, in the rejection of claim 1, the Examiner asserts that col. 4, lines 15-20 and Fig. 9 A-C of Kanno teaches detecting a predetermined property of a line-like part, that col. 5, lines 3-6 and lines 21-27 disclose processing a line-like part of a halftone image by a first dithering technique, and that col. 9, lines 36-43 discloses a second dithering technique. However, Applicant respectfully notes that Kanno actually discloses the following:

Col. 4, lines 15-20 -

"The image binarization apparatus processes the image information, supplied thereto from the image reader, in units of 4x4 picture elements. In other words, the image binarization apparatus first determines whether a picture element of interest which is included in a local region of 4x4 represents a character, a photograph, or a bold character, and then binary-encodes the image of the picture elements in different ways on the basis of the determination."

Col. 5, lines 3-6 and 21-27:

FIG. 3 shows an example of a dithering matrix stored in memory 7A of second threshold value calculation section 7. The numbers in FIG. 3 are threshold values corresponding to the respective picture elements...

Based on the threshold value, binary-encoding section 8 binary-encodes the image information supplied thereto from delay circuit 3, and the binary-encoded image information is supplied to selector section 9. This selector section 9 selects "1" data and outputs it, if determination section 4 determine that the local region represents a bold-character portion.

Col. 9, lines 36-43:

"If, in Step 100, the picture element of interest is determined as representing a leading edge, data "0" is read out of memory 37 of decoder 30 and is supplied to selector section 9 (Steps 101 and 102). In other words, the local region is determined as not being a bold character portion, and selector section 9 selects the image which has been binary-encoded by second threshold calculation section 7."

As summarized above and in Fig. 9, an original image is divided into units of 4 picture elements so that an image binarization apparatus can determine whether a picture element of interest included in the region is a character, a photograph, or a bold character.

In order to understand Kanno in the proper context, Applicant respectfully directs the Examiner's attention to col. 4, lines 57-68, col. 5, lines 7-14 and Fig. 1 which further

supplements the Examiner's cited text of Kanno and further clarifies the meaning thereof. Specifically, Kanno further discloses therein that a first threshold value calculation section 6 calculates a threshold value used for binary-encoding a character, and that a second threshold value calculation section 7 calculates a threshold value used for binary encoding a photograph portion, and that threshold value selection section 5 receives results of the determination from the first threshold value calculation section 6 and the second threshold value calculation section 7 to see whether the local region represents a photograph portion or a character portion.

Clearly, although Kanno discloses a "dithering matrix", which is called "a first dithering technique" by the Examiner, there is no other dithering technique (i.e., no "second dithering technique") supported in the Examiner's cited text. That is, there appears to be no "second dithering technique" as allegedly disclosed in col. 9, lines 36-43 of Kanno. Applicant respectfully asserts that, as discussed above, Kanno teaches a technique that includes using various thresholds to determine whether a portion of image is a character, a photo, or a bold character.

Further, as acknowledge by the Examiner, Kanno fails to teach, disclose or suggest a cluster dot dithering or a dispersed dot dithering technique. Applicant respectfully agrees with the Examiner's admission and would like to further asserts specifically that there is no teaching, disclosure or suggestion in Kanno of detecting a predetermine property of a line-like part of a halftone color image, and processing the line-like part of the halftone color image by a clustered dot dithering technique or a dispersed dot dithering technique according to the detected predetermined property of the line-like part of the halftone color image, as recited in Applicant's claim 1, and that there is no teaching, disclosure or suggestion of a selecting means which selects a clustered dot dithering technique or a dispersed dot dithering technique according to a predetermined property of a line-like part of a halftone color image, as recited in Applicant's claim 8.

With respect to Ostrommoukhov, Applicant acknowledges that the dispersed-dot dithering technique and the clustered-dot dithering technique are discussed in the reference. Further, each of these dithering technique is known, as discussed in the "Background of the Invention" section of Applicant's specification. However, taken the disclosure of Ostrommoukhov in proper context, the dispersed-dot and cluster-dot dithering methods are

only separately discussed in the Background of the Invention section of Ostrommoukhov as various known dithering methods and their respective problems in general. The actual disclosed and claimed invention of Ostrommoukhov is directed to improved dispersed-dot dithering and not to a method in which either dispersed-dot or cluster-dot dithering is used in a process that depends on a detected predetermined property of a line-like part of a halftone color image, as in Applicant's claimed invention.

During the Examiner Interview, the Examiner stated that teaching in the Background of the Invention section of Ostromoukhov can be used in the rejection because the dispersed-dot dithering and cluster-dot dithering are discussed, and, hence, one of ordinary skill in the art would be able to combine the two dithering methods to arrive at Applicant's claimed invention. In response, Applicant respectfully submit that each of the dithering techniques are also discussed in the "Background of the Invention" section of Applicant's specification. However, neither Applicant's nor Ostromoukhov's "Background of the Invention" section teaches, discloses or suggests the two dithering techniques in the combination of features in the method recited in Applicant's pending claims.

Further, as discussed during the Interview, the transistor, capacitor and inductor, for example, are well known devices. Just as the dispersed-dot and cluster-dot dithering methods, for example, are well-known. However, it is how each of these electrical component are interconnected an function cooperatively that many new inventions have been created and patented. Hence, there is no difference in that various dithering techniques may be combined together with other features in a novel way to achieve a novel function that constitute a new invention. Without the proper suggestion or motivation in the cited prior art to combine well-known features

Still further, as disclosed in col. 1, lines 8-15, the disclosed invention of Ostrommoukhov relates to a method and apparatus enabling color or black/white bi-level or multi-level halftones images to be displayed or printed on various raster output devices (cathode ray tubes, plasma displays, liquid crystal displays) or on printing devices (printers, telefaxes). Moreover, col. 2, lines 38-43 discloses that the invention of Ostrommoukhov is effective for 300 and 400 ink-jet printer as well as for 300, 400, 600 and 800 dpi laser printer. Hence, Applicant respectfully submits that there is no clear teaching or suggestion of processing a halftone color image to print a monochromatic image as in Applicant's claimed

invention. Moreover, with the teaching of using the method of improved dispersed-dot dithering that is used for a range of resolution, including 800 dpi, the invention of Ostrommoukhov does not address the issues and solutions of Applicant's invention which includes monochromatic printing by a printer that is not higher than 600 dpi in resolution.

Applicant notes that the Examiner questioned why the limitation of not higher than 600 dpi, as recited in claim 2, and why the thickness of the line-like part is determined by a threshold value correspond to 4 dots, as recited in claim 4 of the present invention. As discussed during the Examiner Interview, there is a correlation between Applicant's claimed features of not more than 600 dpi and the threshold hold value of 4 dots. These claimed features further distinguish the presently claimed invention from that of Ostrommoukhov which teaches the use of improved dispersed-dot dithering in the range of resolution including 800 dpi. Moreover, the limitation of Applicant's claimed resolution of not more than 600 dpi is atypical of the resolutions that are commonly found in printers on the market today that typically have a resolution of 1200 dpi or higher.

With respect to the Examiner's assertion that it would have been obvious to one of ordinary skill in the art to print on medium resolution printer (e.g., 600 dpi as recited in claim 2) and that setting a threshold value of 4 dots (such as recited in claim 4) would be an obvious design choice, Applicant respectfully submits that there is no basis or logic in these assertions made by the Examiner. As the Examiner acknowledged that the current resolution of printers on the market today are typically 1200 dpi, 2400 dpi or even higher, an obvious engineering choice would be to gravitate the specification of a product toward higher resolution so as to meet the de facto resolution of today's printers rather than toward a product that is limited to less than 600 dpi. Hence, the Examiner's assertions are merely Examiner's hindsight based on Applicant's claimed features rather than concrete support that should be found in the cited prior art references.

It is well settled that when combining the references in order to support a *prima facie* case of obviousness, the references must be considered in their entirety. It is further settled that the mere fact that the prior art may be modified to reflect features of the claimed invention does not make the modification and hence the claimed invention obvious unless the desirability of such modification is suggested by the prior art itself (MPEP §2141). Moreover, the claimed invention cannot be used as an instruction manual or "template" to

piece together the teachings of the prior art so that the claimed invention is rendered obvious, In Re Fritsch, 23 USPQ2d 1780 (Fed. Cir. 1992).

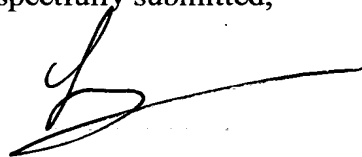
In view of the arguments set forth above with respect to Kanno and Ostrommoukhov, it is respectfully submitted that one of ordinary skill in the art would not be motivated in the manner suggested by the Examiner to modify the device and method of Kanno to apply dithering matrix of Kanno and the improved dispersed-dot dithering of Ostrommoukhov. Even if Kanno and Ostrommoukhov were combined, the references would still fail to teach, disclose or suggest each and every claimed limitations, as discussed above.

In the interest of keeping prosecution history compact, and as Applicant deems that the remarks above to the rejection of independent claims 1 and 8 are also applicable to the rejection of their respective dependent claims in further view of Harrington, Hines and "engineering design choice", Applicant will not traverse each and every rejection of the dependent claims. Applicant reserves the right to do so in the future, as necessary.

Therefore, in view of the foregoing it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 1-14 be allowed that the application be passed to issue.

Should the Examiner believe a conference would be of benefit in expediting the prosecution of the instant application, he is hereby invited to telephone counsel to arrange such a conference.

Respectfully submitted,



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